

USSR

TKACHEV, V. I., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9,
No 5, 1973, pp 102-103

ethylene coatings of high density increase the corrosion-fatigue strength of 30KhGSNA steel specimens in aggressive media; this increase is most effective in acid media. The most protective effect of polyethylene coating was found on hardened and low-temperature annealed specimens. Two figures, one table, eight bibliographic references.

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Inorganic Compounds

USSR

UDC 621.357.12:661.25(088.8)

BEYDIN, V. K., VOROSHILOV, I. P., GORBACHEZ, A. K., NECHIPORENKO, N. N.,
and VOROSHILOV, P. KH.

"A Process for Preparing Sulfuric Acid"

USSR Author's Certificate No 289821, filed 6 Jan 69, published 5 Sep 72,
(from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L262P)

Translation: A process is patented for preparing H_2SO_4 by the electrolysis of an aqueous solution of metal sulfates, during the depolarization of the anode by a sulfur gas in the presence of a catalyst in the electrolyte. This process is improved in that to increase the degree of utilization of the sulfur dioxide and to decrease the anode potential to increase the yield of the final product, a soluble halide salt is added to the electrolyte as a catalyst which is preferential for the cation, similar to the cation of the electrolyte. The catalyst is added in concentrations of 0.1 to 50 grams/liter. The process is carried out for a D_a of 500 to 3,000 amps/ m^2 and at an electrolyte temperature of 20-90°. For example, the electrochemical processing of Na_2SO_4 , the electrolysis is carried out in a three chamber electrolysis apparatus with
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USSSR

BEYDIN, D. K., et al., USSR Author's Certificate No 189821, filed 6 Jan 69, published 5 Sep 72

an iron (wire-gauze) cathode and a hollow graphite anode with a porosity of 33%. The initial electrolyte (Na_2SO_4) is added to a concentration of 290/grams/liter in the middle compartment of the apparatus. To the electrolyte is added 0.56 grams/liter of NaCl. The sulfur dioxide evolves under a pressure of 150 mm of mercury in the hollow part of the anode and it migrates through the pores of the graphite to the anolyte. The process goes at temperatures of the original electrolyte of 60° , and a charge on the electrolytic apparatus of 5 amps and D_a of 1000 amps/ m^2 . It was determined that the anode potential was 1.15 volts and the efficiency of the utilization of the sulfur gas was 75-80%.

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- 32 -

1/2 009
TITLE--USE OF ELECTROLYTIC SODIUM BISULFATE FOR PRESERVING GREEN PLANTS
-U-
AUTHOR--(03)-BEYDIN, V.K., PESOTSKIY, V.F., RADINA, G.N.
COUNTRY OF INFO--USSR
SOURCE--KHIM. SEL. KHOZ. 1970, 8(2), 139-40
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--SODIUM COMPOUND, SULFATE, HYDROGEN COMPOUND, PLANT SPRAYING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1370
CIRC ACCESSION NO--AP0125018
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125018

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROLYTICALLY PRODUCED NAHSO
SUB4 IN THE FORM OF PELLETS OR FLAKES AND WATER SOL. (100PERCENT),
CONTAINS 82-99PERCENT NAHSO SUB4 AND HAS A D. OF 2.97. THE PRESERVATIVE
PROPERTIES FOR GREEN PLANTS ARE SIMILAR TO THOSE OF OTHER PRESERVATIVES.

UNCLASSIFIED

AT0033904

NUCLEAR SOL ABST. 1/70 UR 0000

3089 (N-69-36291) X-RAY EMISSION FROM THE SOLAR CORONA. Beigman, I. L. (and others). (Akademiya Nauk SSSR, Moscow, Institut Fiziki). Translation of Russian Preprint No. 104. 22p. (NASA-CR-105625). CFSTI.

A number of new experimental data have recently become available on the spectrum of the solar corona in the x-ray region (1 to 30 Å). In this paper, the spectrum is theoretically calculated with a number of refinements compared to previous computations. Specifically, dielectronic recombination and photorecombination on all levels were taken into consideration in calculating the ionization equilibrium. A computer was used for determining the effective cross sections of excitation, ionization, dielectronic recombination and photorecombination necessary for calculating population intensities. (auth) (STAR)

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1/2 018
UNCLASSIFIED
TITLE--BORN CROSS SECTION FOR THE N, N PRIME TRANSITION -U-
PROCESSING DATE--27NOV70
AUTHOR--(03)-BEYGMAN, I.L., URNOV, A.M., SHEVELKO, V.P.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1825-1829
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--HYDROGEN, ATOM, GREEN FUNCTION, ELECTRON TRANSITION,
OSCILLATOR STRENGTH, CAPTURE CROSS SECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0015
STEP NO--UR/0056/70/058/005/1825/8129
CIRC ACCESSION NO--AP0127665
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127665

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AN ANALYTIC EXPRESSION FOR THE TOTAL (WITH RESPECT TO L AND L PRIME) SQUARED BORN AMPLITUDE FOR THE N , N PRIME TRANSITION IS OBTAINED BY MEANS OF THE COULOMB GREEN'S FUNCTION.

THE FORMULA CAN BE SIGNIFICANTLY SIMPLIFIED IN THE LIMITING CASES OF LARGE VALUES OF N AND N PRIME. AN EXPRESSION FOR THE TRANSITION CROSS SECTION IS OBTAINED AT HIGH ELECTRON ENERGIES WHICH IS SIMILAR TO THE KRAMERS APPROXIMATION FOR OSCILLATOR STRENGTH (1 IS MUCH LESS THAN ΔN IS MUCH LESS THAN N).

N. LEBEDEVA, AN SSSR.

FACILITY: FIZICHESKIY INSTITUT IM. P.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THERMAL MODEL OF THE ACTIVE REGION OF THE SOLAR CORONA -U-
AUTHOR--(02)-BEYGHAN, I.L., VAYNSHTEYN, L.A.
COUNTRY OF INFO--USSR *B*
SOURCE--TRANSLATED FOR CULHAM LAB., ABINGDON, ENG., FROM PREPRINT NO. 94.
26P. DEP. CFSTI CTO-705
DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--SOLAR CORONA, X RAY, RESONANCE LINE, IONIZATION, MODEL, SOLAR
ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0044

STEP NO--08/0000/70/000/094/0026/0026

CIRC ACCESSION NO--AT0129922

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0129922

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE X RAY FLUXES IN THE RESONANCE LINES λ LESS THAN 25 ANGSTROM OF THE MOST ABUNDANT IONS IN THE SOLAR CORONA WERE CALCULATED FOR A WIDE RANGE OF TEMPERATURES (0.2 TO 18) TIMES 10^6 DEGREEK. THE RATES OF EXCITATION, IONIZATION, AND RECOMBINATION (PHOTO AND DIELECTRONIC) OBTAINED PREVIOUSLY BY NUMERICAL METHODS WERE USED. THE CALCULATED FLUXES WERE USED TO ANALYZE EXPERIMENTAL DATA ON THE EMISSION OF THE ACTIVE REGIONS IN THE SPECTRAL RANGE λ LESS THAN 25 ANGSTROM. IT WAS ASSUMED THAT THE PHOTOSPHERIC ABUNDANCE OF C, N, AND O IN THE CORONA IS CORRECT AND THE ABUNDANCES OF NE, MG, AND FE WERE CALCULATED FROM EXPERIMENTAL DATA. THE ANALYSIS WAS BASED ON A THERMAL MODEL OF THE ACTIVE REGION. THE AVAILABLE DATA CAN BE DIVIDED INTO TWO GROUPS. IT IS SHOWN THAT ALL CASES CAN BE DESCRIBED BY A MODEL OF THE ACTIVE REGION WITH A TEMPERATURE T EQUALS 2.5 TO 3 (IN UNITS OF 10^6 DEGREEK) THE ONLY DIFFERENCE BEING IN THE EMISSION MEASURE γ TRIPLE BOND OR NEGATIVE CHARGE N^{+2} SUBE $V-3.2$ TIMES 10^{49} CM N^{+3} EQUALS 0.07 TO 0.16. TO DESCRIBE THE OBSERVATIONS ONE HAS TO ADOPT A SMOOTH VARIATION OF T UP TO T_{SUB1} AND THE ESTIMATE $T_{EQUAL 4}$ IS OBTAINED FROM THE RELATIVE FLUXES FE XVII-Fe XVIII. THE ABUNDANCES PROPOSED BY VARIOUS AUTHORS ARE COMPARED. THE TOTAL X RAY FLUXES IN THE INTERVALS $\lambda_{MINUS} \lambda_{PLUS} \Delta \lambda$ FOR THE SPECTRAL RANGE λ LESS THAN 25 ANGSTROM ARE CALCULATED FOR THE DIFFERENT SETS OF ABUNDANCES AND TEMPERATURES AT $\Delta \lambda$ EQUALS 0.2 AND 1 ANGSTROM.

FACILITY: AKADEMIYA NAUK SSSR, MOSCOW. INSTITUT FIZIKI.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ALUMINUM POLYOLEFIN COMPOUNDS -U-

AUTHOR--(05)--CHIRKOV, N.M., BEYKHOLD, G.A., BRIKENSHTEYN, KH.M., KANASHKIN,
YU.F., MATKOVSKIY, P.YE.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,692
REFERENCE--OTKRYTIYA, IZDBRET., PROM OBRAZTSY, TOVARNYE ZNAKI, 1970 47(9),
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ALUMINUM, POLYOLEFIN RESIN, POLYMERIZATION,
ETHYLENE, METAL CONTAINING POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0848

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136282

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136282

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AL, POLYOLEFIN COMPOS. ARE PREPO.
BY POLYMN. OR COPOLYMN. OF C SUB2 H SUB4 WITH OTHER ALPHA, OLEFINS IN AN
INERT HYDROCARBON SOLVENT IN THE PRESENCE OF AL OR ITS ALLOYS (E.G., IN
THE FORM OF POWDER, FLAKES, WIRE, AND SHAVINGS) AND A CATALYST. THE
CATALYSTS USED ARE TRANSITION, METAL HALIDES OR HYDROXYHALIDES SOL. IN
HYDROCARBONS, E.G. V HYDROXYCHLORIDE. FACILITY: FILIAL
INSTITUTA KHIMICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

USSR

UDC: 51

BEYKO, I. V.

"A Maximin Set and Algorithm for its Construction"

V sb. Nekotor. voпр. prikl. mat. (Some Problems of Applied Mathematics-- collection of works), vyp. 5, Kiev, 1971, pp 175-177 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V763)

Translation: The author introduces the concept of a maximin set for the first player in an antagonistic game. A criterion is presented for the maximin property of a set, and a certain algorithm is described for finding it in the case where the set of pure strategies for this player is finite. It should be mentioned that the exposition is not sufficiently clear, and that some of the notation is inaccurate. I. Fokin.

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USSR

UDC: 519.3:51:62-50

BEYKO, I.V., Institute of Mathematics, Academy of Sciences Ukrainian SSR

"Some Evaluations of Maxmin Time and Absorption Time in a Chasing Problem, Optimality Conditions and a Chasing Algorithm"

Kiev, Dopovidi Akademii Nauk Ukrains'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 968-971

Abstract: The article considers the problem of the chasing of object y by object x , the objects changing position with time in sets $Y \ni y$ and $X \ni x$ according to the equations

$$\dot{x} = A(x^0, u, t), \quad \dot{y} = B(y^0, v, t)$$

where x^0 and y^0 are the positions of the objects at the initial

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USSR

BEYKO, I.V., Dopovidi Akademii Nauk Ukrain's'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 968-971

moment of time $t = t_0$, u and v are controls (elements of given sets U and V), and A and B are given transforms of the sets $D^x \times U \times R$ and $D^y \times V \times R$ respectively in the set D^x and D^y . $T_{u,v}^K$ denotes the minimum value of time (if it exists) in which $(A(x^0, u, t), B(y^0, v, t)) \in K$, and T^K denotes $\sup_{v \in V} \inf_{u \in U} T_{u,v}^K$. K, ε is the problem. For given $\varepsilon > 0$ and $K \subset D^x \times D^y$ find controls $u_K^\varepsilon \in U$, $v_K^\varepsilon \in V$ such as satisfy the condition

$$|T_{u_K^\varepsilon, v_K^\varepsilon}^K - T^K| < \varepsilon, \varrho(A(x^0, u_K^\varepsilon, T_{u_K^\varepsilon, v_K^\varepsilon}^K) \times B(y^0, v_K^\varepsilon, T_{u_K^\varepsilon, v_K^\varepsilon}^K), K) < \varepsilon.$$

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USSR

BEYKO, I.V., *Dopovidi Akademii Nauk Ukrains'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky*, No 11, Nov 70, pp 968-971

The author modifies the method previously suggested by him for finding absorption time \bar{T}^K in the case of the set $K \equiv K_s = \{x, y | x_i = y_i, i = 1, \dots, s\}$ and process controls which are described by systems of ordinary differential equations of order n , in which the sets $D_\psi = \{x, y | \psi^*(x - y) = 0, \psi_i = 0, i > s\}$ were selected as elements of the K -optimal set G . If $V(t)$ is chosen instead of V in the suggested algorithms, B -algorithms are automatically obtained for finding controls which satisfy the necessary conditions for optimality on the basis of \max_{\min} time of the K, O -problem. A theorem is derived which permits the formulation of various optimality criteria with respect to the functionals Φ chosen. It follows from this theorem that the K, O -problem decomposes into two problems

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USSR

BEYKO, I.V., Dopovidi Akademii Nauk Ukrain's'koi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 968-971.

$$\Phi(P, B(y^0, \bar{v}, T^K)) = \max_{v \in V(T^K)} \Phi(P, B(y^0, v, T^K)),$$

and

$$\Phi(P, A(x^0, \bar{u}, T^K)) = \max_{u \in U} \Phi(P, A(x^0, u, T^K)),$$

If these two problems satisfy conditions under which the maximum principle is in effect, control u^0 satisfies the maximum principle and control v^0 satisfies the maximum principle with certain phase constraints.

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USSR

UDC 678.539.374

BEYL", A. L., and PORTNOV, G. G., Institute of Mechanics of Polymers of the Academy of Sciences Latvian SSR, Riga

"Possible Creep Mechanism of Multilayer Composite Rings Under Internal Pressure"

Riga, Mekhanika Polimers, No 5, Sep/Oct 73, pp 884-890

Abstract: The deformability of a ring consisting of helically arranged reinforcing layers and a polymeric bonding agent is analyzed. In measuring the dislocations of the external ring surface under the action of an internal pressure, the creep of the material cannot properly be distinguished from the crawling apart of the ring. At prolonged action of internal pressure, under increased pliability conditions of the matrix, the development of additional deformations caused by the crawling of the coils is possible. The analysis of creep deformation effected by this crawling signifies that the elasticity of the rigid reinforcing layer has little effect on the deformations related to the crawling of the ring. Four figures, 24 formulas, seven bibliographic references.

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USSR

UDC 613(470)(091)

SHITSKOVA, A. P., AKSYUK, A. F., BEYLIKHIS, G. A., GNOYEVAYA, V. L., GUSEV, M. I.,
ZHILIN, P. N., NOZKIN, Ye. L., PAL'TSEV, Yu. P., and YASTREPOV, G. G.

"Coping With Current Health Problems in the RSFSR"

Moscow, Gigiyena i Sanitariya, No 12, 1972, pp 8-16

Abstract: Health problems were a major concern of the communist leaders after the revolution who swiftly organized agencies and services to deal with epidemics and famines. As these were brought under control, health officials became involved in city planning, design and building of houses, etc. The increasing tempo of industrialization led the authorities by the 1930's to study atmospheric pollution and the disposal of municipal and industrial sewage. Water pollution and suitable use of water resources were major interests by the 1940's. Following the war, industrial hygiene and occupational diseases along with food poisonings became the center of attention. In the 1960's research was focused on the problems created by the chemicalization of agriculture, the use of pesticides in particular. The effects of exposure to ultrasound, radiation, microwaves, and other technological advances are now under study. Much stress is placed on preventive medicine, with frequent mass check-ups of the population, particularly children and adolescents. The importance of

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USSR

SHITSKOVA, A. P., Gigiyena i Sanitariya, No 12, 1972, pp 8-16

comprehensive, accurate health statistics was recognized in the 1920's and they are constantly being refined and improved as an indispensable basis for planning and taking effective action.

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AA0040628

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

B

234642 PLASTIC COMPONENT PRESS MOULD comprises a split case 1 with a runner and a demountable shaped cavity 2 made of rubber with a slit 3. The cavity is taken out from the carcass when the poured plastic is solidified, and is opened up along the slit.

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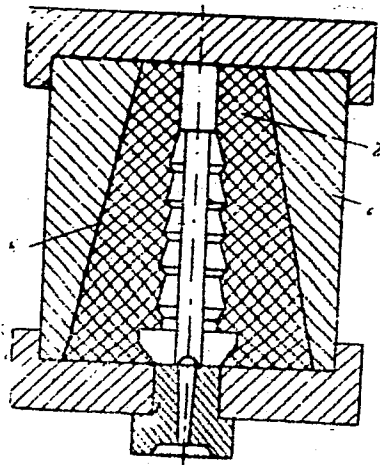
AUTHORS: Beylin, A. M.; Reynsburg, A. M.; Bondar', M. Yu.;
Ripman, D. M.; Bakunin, V. A.; and Golovkov, G. V.

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19750185

AA0040628



27.12.65. as 1045751/23-5, BEILIN, A.M. et al.
(26.6.69) Bul. 4/10.1.69. Class 39a² Int. Cl.
B 29c.

19750186

USSR

UDC 621.362.2(088.8)

BEYLIN, A. Yu., DUDKIN, L. D., ZYKOVA, N. P., KOLOMEYETS, N. V. MAZUR, V. A.,
TARTAKOVSKIY, D. L., KHANIN, M. A.

"A Thermocouple"

USSR Author's Certificate No 227428, Filed 6 Jul 67, Published 20 Jan 70 (from
RZh-Electrotehnika i energetika, No 8, Aug 70, Abstract No 8A127 P)

Translation: The proposed thermocouple contains a P-branch of germanium tellu-
ride, a commutation bus of iron, and a commutation substrate. A mechanical
mixture of tungsten and tin telluride, or tungsten and lead telluride is used
as the commutation substrate. This is to improve mechanical strength and reduce
power lost in commutation.

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1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FORMATION OF A POLYCONJUGATED POLYMER DURING THE THERMAL
DECOMPOSITION OF POLYACENAPHTHYLENE -U-
AUTHOR--(05)--MARKEVICH, I.N., BEYLIN, S.I., TETERINA, M.P., KARPACHEVA,
G.P., POLGOPLOSK, B.A.
COUNTRY (IF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 362-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CONJUGATED POLYMER, THERMAL DECOMPOSITION, NAPHTHALENE,
NAPHTHENE, POLYMER STRUCTURE, CHEMICAL KINETICS, PYROLYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1092 STEP NO--UR/0020/70/191/002/0362/0365
CIRC ACCESSION NO--AT0124749
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124749

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL DECOMPN. OF
POLYACENAPHTHYLENE (I) IN PHCL AND IN BULK STARTS AT 180DEGREES AND
335-45DEGREES, RESP. THE PRODUCTS CONTAIN ACENAPHTHENE, ACENAPHTYLENE
(II) A CONJUGATED POLYMER, BUT NO H. ON THE BASIS OF IR AND EPR
SPECTROSCOPY THE POLYMER WAS ASSIGNED STRUCTURE III (N EQUALS 5-7). THE
FORMATION OF III INVOLVES THE SPLITTING OFF OF II FROM I AND THE REDN.
OF II WITH I. THE KINETICS OF I MOL. WT. DECREASE DURING THE PYROLYSIS
IS DISCUSSED. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA,
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 539.67

BEYLIN, V. M., VEKILOV, Yu. Kh., KADYSHEVICH, A. Ye., and KRASIL'NIKOV, O. M.

"Effect of Alloying An Electrically Active Addition on Phonon Relaxation in Certain Intermetallic Combinations"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials"), Moscow, Izd-vo "Nauka", 1970, pp 41-43

Abstract: It is shown that the observed ultrasonic absorption is determined by the interaction of an elastic wave with crystal lattice oscillations. Alloying by an electrically active addition leads to increased absorption. Evaluations of the effect of alloying on the absorption coefficient by using data on the effect of alloying on third-order constants are presented. 2 figures, 5 references.

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USSR

UDC 621.315.532

BEYLIN, V. M., VEKILOV, YU. KH., KRASIL'NIKOV, O. M., Moscow
Institute of Steel and Alloys, Moscow, Ministry of Higher and
Secondary Specialized Education RSFSR

"Determining the Effective Masses of Current Carriers in Strongly
Alloyed Semiconductors by the Effect of Conduction Electrons
(Holes) on Elastic Constants"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970,
pp 912-914

Abstract: The effective masses of the density of states of
current carriers $m_{\vec{k}}$ in strongly alloyed semiconductors were
determined with respect to the temperature dependence of the
effect of conduction electrons (holes) on semiconductor elastic
constants. $m_{\vec{k}}$ are determined for troughs on the $\langle 111 \rangle$ and $\langle 100 \rangle$
axes in n-Ge, $\langle 100 \rangle$ in n-Si, and $\langle 000 \rangle$ in p-Si and p-GaAs.
The accuracy for the determination of $m_{\vec{k}}$ is not inferior to the
accuracy for the determination of effective mass in a strongly
alloyed material.
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USSR

BEYLIN, V. M., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 912-914

The most accurate direct method of determining effective mass -- the method of cyclotron resonance -- is inapplicable to strongly alloyed semiconductors (the condition of $wt \ll 1$ required for resonance is not satisfied), and masses are usually determined by methods having low accuracy. For this reason it is of interest to investigate the possibility of determining m^* by elastic constant data. The author's method permits sensing of variation of m^* in the presence of strong alloying caused by the nonparabolic nature of the bands (p-GaAs, p-Si), and it also permits determination of effective masses in upper systems of minima. Applicability of the method is limited to substances in which the effect of conduction electrons (holes) on the elastic constant is observed. Values of effective masses are tabulated for germanium, silicon and gallium arsenide.

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1/2 039 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ELASTIC CONSTANTS OF STRONGLY DOPED N SILICON AND P GERMANIUM -U-
AUTHOR--BEYLIN, V.M., VEKILOV, YU.KH., KRASILNIKOV, O.M.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(3), 684-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SILICON, GERMANIUM, DOPED ALLOY, HIGH PURITY METAL, METAL
ELASTICITY, ULTRASONIC EFFECT, INTERFEROMETER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1988/0655 STEP NO--UR/0181/70/012/003/0684/0689
CIRC ACCESSION NO--AP0105634
UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105634

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELASTIC CONSTS. OF PURE AND STRONGLY DOPED N-SI AND P-GE WERE MEASURED BY THE ULTRASOUND INTERFEROMETRIC METHOD AT 78-300DEGREESK. ALL THE ELASTIC CONSTS. (AND THEIR TEMP. DEPENDENCES) OF STRONGLY DOPED SPECIMENS DIFFER CONSIDERABLY FROM THE CORRESPONDING ELASTIC CONSTS. OF PURE SPECIMENS. IN THE CASE OF N-SI, THE TEMP. DEPENDENCE OF THE CONST. C PRIME CHANGES INTO AN OPPOSITE DEPENDENCE. VARIATION OF THIS ELASTIC CONST. IS PRODUCED BY THE SAME MECHANISM OF INTERVALLEY SCATTERING AS THE VARIATION OF THE ELASTIC CONST. C SUB44 IN N-GE. VARIATION OF C SUB44 IN N-SI IS DETD. BY THE SPLITTING OF THE SUB BANDS DELTA SUB1 AND DELTA SUB2 IN THE SHIFT. IN P-GE, VARIATION OF THE ELASTIC CONSTS. WITH DOPING IS RELATED TO THE EFFECT OF DEFORMATION ON THE DISPERSION OF HOLES. FROM THE COMPARISON OF THE EXPTL. DATA WITH THE CALCN., THE EFFECTIVE MASS WAS FOUND OF STRONGLY DOPED N-SI AND THE CONSTS. OF THE DEFORMATION POTENTIAL, SIGMA PRIME SUBU AND SIGMA SUBU. IN P-GE, THE DEFORMATION POTENTIAL CONSTS. B AND D WERE FOUND.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DETERMINING THE EFFECTIVE MASSES OF CURRENT CARRIERS IN STRONGLY
ALLOYED SEMICONDUCTORS BY THE EFFECT OF CONDUCTION ELECTRONS HOLES ON
AUTHOR--(03)-BEYLIN, V.M., VEKILOV, YU.KH., KRASILNIKOV, O.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, NO. 5, 1970,
PP 912-914
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM, SILICON SEMICONDUCTOR, GALLIUM ARSENIDE
SEMICONDUCTOR, ELECTRON HOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1452

STEP NO--UR/0449/70/004/005/0912/0914

CIRC ACCESSION NO--AP0136778

UNCLASSIFIED

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136778

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVE MASSES OF THE DENSITY OF STATES OF CURRENT CARRIERS m IN STRONGLY ALLOYED SEMICONDUCTORS WERE DETERMINED WITH RESPECT TO THE TEMPERATURE DEPENDENCE OF THE EFFECT OF CONDUCTION ELECTRONS (HOLES) ON SEMICONDUCTOR ELASTIC CONSTANTS. m ARE DETERMINED FOR TROUGHS ON THE (111) AND (100) AXES IN N-GE, (100) IN N-SI, AND (000) IN P-SI AND P-GAAS. THE ACCURACY FOR THE DETERMINATION OF m IS NOT INFERIOR TO THE ACCURACY FOR THE DETERMINATION OF EFFECTIVE MASS IN A STRONGLY ALLOYED MATERIAL. THE MOST ACCURATE DIRECT METHOD OF DETERMINING EFFECTIVE MASS, THE METHOD OF CYCLOTRON RESONANCE, IS INAPPLICABLE TO STRONGLY ALLOYED SEMICONDUCTORS (THE CONDITION OF ST 1 REQUIRED FOR RESONANCE IS NOT SATISFIED), AND MASSES ARE USUALLY DETERMINED BY METHODS HAVING LOW ACCURACY. FOR THIS REASON IT IS OF INTEREST TO INVESTIGATE THE POSSIBILITY OF DETERMINING m BY ELASTIC CONSTANT DATA. THE AUTHOR'S METHOD PERMITS SENSING OF VARIATION OF m IN THE PRESENCE OF STRONG ALLOYING CAUSED BY THE NONPARABOLIC NATURE OF THE BANDS (P-GAAS, P-SI), AND IT ALSO PERMITS DETERMINATION OF EFFECTIVE MASSES IN UPPER SYSTEMS OF MINIMA. APPLICABILITY OF THE METHOD IS LIMITED TO SUBSTANCES IN WHICH THE EFFECT OF CONDUCTION ELECTRONS (HOLES) ON THE ELASTIC CONSTANT IS OBSERVED. VALUES OF EFFECTIVE MASSES ARE TABULATED FOR GERMANIUM, SILICON AND GALLIUM ARSENIDE. FACILITY: INSTITUTE OF STEEL AND ALLOYS, MOSCOW.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DETERMINING THE EFFECTIVE MASSES OF CURRENT CARRIERS IN STRONGLY
ALLOYED SEMICONDUCTORS BY THE EFFECT OF CONDUCTION ELECTRONS HOLES ON
AUTHOR--(03)-BEYLIN, V.M., VEKILOV, YU.KH., KRASILNIKOV, O.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, NO. 5, 1970,
PP 912-914
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM, SILICON SEMICONDUCTOR, GALLIUM ARSENIDE
SEMICONDUCTOR, ELECTRON HOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1452

STEP NO--UR/0449/70/004/005/0912/0914

CIRC ACCESSION NO--AP0136778

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136778

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVE MASSES OF THE DENSITY OF STATES OF CURRENT CARRIERS m IN STRONGLY ALLOYED SEMICONDUCTORS WERE DETERMINED WITH RESPECT TO THE TEMPERATURE DEPENDENCE OF THE EFFECT OF CONDUCTION ELECTRONS (HOLES) ON SEMICONDUCTOR ELASTIC CONSTANTS. m ARE DETERMINED FOR TROUGHS ON THE (111) AND (100) AXES IN N-GE, (100) IN N-SI, AND (000) IN P-SI AND P-GAAS. THE ACCURACY FOR THE DETERMINATION OF m IN A STRONGLY ALLOYED MATERIAL. THE MOST ACCURATE DIRECT METHOD OF DETERMINING EFFECTIVE MASS, THE METHOD OF CYCLOTRON RESONANCE, IS INAPPLICABLE TO STRONGLY ALLOYED SEMICONDUCTORS (THE CONDITION OF ST 1 REQUIRED FOR RESONANCE IS NOT SATISFIED), AND MASSES ARE USUALLY DETERMINED BY METHODS HAVING LOW ACCURACY. FOR THIS REASON IT IS OF INTEREST TO INVESTIGATE THE POSSIBILITY OF DETERMINING m BY ELASTIC CONSTANT DATA. THE AUTHOR'S METHOD PERMITS SENSING OF VARIATION OF m IN THE PRESENCE OF STRONG ALLOYING CAUSED BY THE NONPARABOLIC NATURE OF THE BANDS (P-GAAS, P-SI), AND IT ALSO PERMITS DETERMINATION OF EFFECTIVE MASSES IN UPPER SYSTEMS OF MINIMA. APPLICABILITY OF THE METHOD IS LIMITED TO SUBSTANCES IN WHICH THE EFFECT OF CONDUCTION ELECTRONS (HOLES) ON THE ELASTIC CONSTANT IS OBSERVED. VALUES OF EFFECTIVE MASSES ARE TABULATED FOR GERMANIUM, SILICON AND GALLIUM ARSENIDE. FACILITY: INSTITUTE OF STEEL AND ALLOYS, MOSCOW.

UNCLASSIFIED

Acc. Nr.

AP0049346

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code

4R0365

106494r Technical inhibitors of the acid corrosion of steel studied from electrocapillary curves. Afanas'ev, A. S.; Bel-

inova, L. A.; Malysheva, T. V. (Dnepropetrovsk. Met. Inst., Dnepropetrovsk, USSR). *Zashch. Metal.* 1970, 6(1), 81-6 (Russ).

The relation between the adsorption of surfactants on Hg and their inhibiting action on low-C steel was studied from electrocapillary curves plotted with an Hg electrometer in 20% H_2SO_4 at $25 \pm 1^\circ$ in the range 50-100 mV. The inhibitors were used in amts. of 0.2 wt. %. The type of adsorbed particle was detd. by the max. potential with ($\varphi_{m,i}$) and without ($\varphi_{m,0}$) inhibitors. Cathodic additives gave $\varphi_{m,i} - \varphi_{m,0} = \Delta\varphi_m > 0$ and anodic additives gave $-\Delta\varphi_m < 0$. The stability of adsorption was detd. by the potential at the junction of the branches of electrocapillary curves plotted with and without additives. This corresponds approx. to the potential of desorption φ_{des} . Additives having $\varphi_{des} > +0.5V$ were designated as Type I and those with $\varphi_{des} = 0.34-0.44V$, as Type II. For both types there was a relation between the coeff. of corrosion inhibition (γ) and the value $\Delta\varphi_m$. Between $\Delta\varphi_m < 0.2V$ and $\Delta\varphi_m > 0.2V$, the value of γ changed sharply. A parallel was observed between adsorption on Hg and protective effect. The value of γ for Type I cationic surfactant was greater than that for Type II. Surface activity

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is important but is not the only factor in protective activity so that γ does not depend directly on surface tension. Type I inhibitors are adsorbed due to interaction of π atoms in their aromatic rings with Hg surface and also to the adsorption of Cl^- and Br^- ions on the Hg surface which act as "anionic bridges" for the adsorption of org. cations. Type II inhibitors do not contain halogen ions and thus are only adsorbed by the former mechanism. Addn. of KBr increases γ for a Type II inhibitor, changing it to a Type I.

J. E. Scarlett

2/2

19801164

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1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DYNAMICS OF A CHANGE IN THE ELECTRON CURRENT FRACTION IN THE
CATHODE REGION OF AN ARC DISCHARGE -U-
AUTHOR-(03)-BEYLIS, I.I., LYUBIMOV, G.A., RAKHOVSKIY, V.I.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 307-10
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ARC DISCHARGE, ION CURRENT, ION MOBILITY, CATHODE, ELECTRODE
PROPERTY, THERMIONIC EMISSION, METAL HEATING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REFL/FRA--3005/1642 STEP NO--UR/0020/70/191/002/0307/0310
CIRC ACCESSION NO--AT0133547
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133547

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE UNSTEADY STATE PROBLEM OF THE DEVELOPMENT OF A CATHODE SPOT IS SOLVED BY USING THE MODEL SUGGESTED EARLIER (1969), IN WHICH THE IONIC CURRENT IS DETD. MAINLY BY THE DIFFUSION OF IONS WHICH ENTER FROM THE REGION OF IONIZATION. THUS, THE UNSTEADY STATE CHANGE IN THE FRACTION OF THE IONIC CURRENT IS DETD. BY SOLVING THE UNSTEADY STATE DIFFUSION EQUATION FOR THE CONDITIONS THAT THERE IS A SOURCE OF IONS WHICH RESULTS FROM THE IONIZATION OF NEUTRAL ATOMS BY ELECTRONS EMITTED FROM THE CATHODE. THE CALCNS. SHOW THAT THE THERMAL FIELD EMISSION ELECTRON SPOT CAN EXIST ON A HEATED SURFACE ONLY FOR A LOW VALUE OF THE ELECTRON CURRENT FRACTION (0.5-0.7), BECAUSE A HIGH SURFACE TEMP. CAN BE MAINTAINED ONLY BY THE IONIC COMPONENT OF THE CURRENT. FACILITY: NAUCH-ISSLED. INST. MEKH., MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--OXIDATIVE POLAROGRAPHIC STUDY OF AROMATIC AMINES, II -U-

AUTHOR--BEYLIS, YU.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBHCH. KHIM. 1970, 40(4), 745-50

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLAROGRAPHY, PLATINUM ELECTRODE, AROMATIC AMINE, DIAMINE,
SULFIDE, CYCLIC GROUP, BENZENE DERIVATIVE, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3006/0820

STEP NO--UR/0079/70/040/004/0745/0750

CIRC ACCESSION NO--AP0134553

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXIDATIVE POLAROGRAPHY ON ROTATING
PT MICROANODES, WAS USED TO SHOW THE EFFECT OF STURCTURE ON THE HALF
WAVE POTENTIALS IN A SERIES OF AROMATIC AMINES, DIAMINES, AND DIAMINO
SULFIDES AT PH 1.5-11.5. THE HAMMETT EQUATION WAS SUCCESSFULLY USED TO
CORRELATE THE HALF WAVE POTENTIAL DATA WITH SUBSTITUENT EFFECT AND A
TABULATION IS GIVEN FOR THE TRANSMISSIBILITY OF THE STRUCTURAL EFFECTS
THROUGH THE C SUB6 H SUB4 RING, CH SUB2 S, AND O BRIDGES, AND BETWEEN PH
RINGS OF BIPHENYL DERIVS. GENERALLY, O AND S BRIDGES WERE BETTER
CONDUCTORS THAT THE CH SUB2 LINKS. FACILITY: KHAR'KOV,
POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

Pesticides

USSR

UDC 632.934.1:546.57-386

KUZNETSOV, A. YA., BAYGOZHIN, A., BEYM, I. G., MIRONOV, V. YE.,
Leningrad State Pedagogical Institute imeni A. I. GERTSEN

"Study on the Light Sensitivity and Fungicidal Properties of
Silver Complexes"

Leningrad, Zhurnal prikladnoy Khimii, Vol 64, No 10, Oct 71,
pp 2311-2316

Abstract: Dense shielding of a silver ion by various ligands without reducing properties makes it possible to obtain photo-stable complexes. This study concerns the quantitative aspects of the light sensitivity, thermal stability, and the fungicidal properties of a number of silver compounds with high light sensitivity. The highest light resistance (1 year+) was shown by tris-1,10-phenanthroline perchlorate. The high light resistance is attributed to the dense shielding of the silver ion by three large ligand molecules which hinder the charge transfer to Ag^+ from outer-sphere ions as well as to the low electron donor capacity of the outer-sphere perchlorate ion. It is noteworthy that
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KUZNETSOV, A. YA., et al, Zhurnal prikladnoy Khimii, Vol 64,
No 10, Oct 71, pp 2311-2316

high light resistance is typical of thermally stable compounds. Bis-2,2'-biopyridylsilver nitrate was the only compound to pass the standard tests for biological activity (15 days). Silver complexes with 1,10-phenanthroline and ethylenethiourea also show promise with regard to both light resistance and biological activity. These compounds must be used in the form of nitrates or perchlorates with a co-ordination-saturated inner sphere. Test data on the light resistance and biological activity of complex silver compounds, their formulas, ligands, complex concentration in solution and test durations are given.

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UDC 616.8-009.836.12-092 "52"

YAKHNO, N. N., RAYT, M. L., BEYN, A. M., and LATASH, L. P., Laboratory of Problems of the Control of Functions in the Organism of Man and Animals imeni N. I. Grashchenkov, and Chair of Clinical Physiology, Central Scientific Research Laboratory of the First Moscow Medical Institute imeni I. M. Sechenov

"Diurnal Rhythm of Wakefulness and Sleep in Narcolepsy"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 20-23

Abstract: The diurnal rhythm of wakefulness and sleep was studied in one patient with monosymptomatic narcolepsy (attacks of sleep during daytime) and in two patients with polysymptomatic narcolepsy (sleep attacks, cataplexy phases, and hallucinations during night sleep). Electroencephalograms (frontal, parietal, and occipital areas), electromyograms (mouth musculature), and electrocardiograms were recorded while the patients were carefully observed over a 24-hour period. The total duration of the sleep phase was markedly prolonged in the patient with monosymptomatic narcolepsy as a result of the sleep seizures during the day. Stages of pronounced drowsiness were observed in the patients with polysymptomatic narcolepsy. All patients

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YAKHNO, N. N., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 20-23

displayed a deficit of the various "slow" sleep phases and increased recurrence of "rapid" sleep phases in the first half of the day and of delta-sleep phases in the evening and at night. A premature onset and a greater phasic activity of "rapid" sleep was observed in patients with polysymptomatic narcolepsy.

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USSR

UDC 535.872

BEYNAROVICH, L. N., SALIMOVA, E. A., MARTYNOV, V. P.

"Manufacture of Large Mirrors of Polymers by the Copying Method"

Optiko-mekhanicheskaya Promyshlennost', No 10, 1971, pp 41-44.

BASTRACT: A method is described for manufacture of spherical mirrors 700 mm in diameter of a polyester resin, using silumin as a base. The cost of these mirrors is significantly lower than similar glass mirrors. The copying method used is quite straight forward, involving production of a master reversed shape by casting of polyester on an optical glass mirror, after which the reversed shape master is used to produce polyester mirrors of the proper shape. A photograph is presented of the casting table used for production of the mirrors.

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USSR

UDC 627.81.034(47+57)

BEYROM, S. G., KASKEVICH, L. N., RYBKA, V. G., SAVKIN, V. M., SHIROKOV, V. M.

"Dynamics of Revision of the Banks of the Novosibirsk Hydroelectric Power Plant Reservoir in 1966"

Izuch. i ispol'z. vodn. resursov SSSR. 1966-1967 V sb. (Study and Use of USSR Water Resources. 1966-1967 -- Collection of Works), Moscow, Nauka Press, 1970, pp 134-135 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D45)

Translatnon: A brief description of the level and wind-wave conditions of the reservoir, data on the nature of revision of the reservoir banks and the dynamics of the bottom layer of the layers of water involved in the wave action in the shore zone and data on the alluvial displacements along the shore are presented.

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Acc. Nr: **AP0053890** - Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

4R0078

116306v Cadmium hydroxide and hydroxosulfates, and products of their thermolysis. Margulis, E. V.; Shokarev, M. M.; Beisekova, L. I.; Vershinina, E. N. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 374-9 (Russ). The title compds. were studied by using x-ray diffraction, ir spectrophotometry, DTA and thermal gravimetry. In the investigated sulfates, SO_4^{2-} has D_4 symmetry and is coordinated to 4 Cd^{2+} . The splitting of $\nu(\text{SO}_4)$ implies that the strength of the crystal field decreases with the compds. in the order: $\text{CdSO}_4 > 2\text{CdO} \cdot \text{CdSO}_4 > \text{CdSO}_4 \cdot \text{Cd}(\text{OH})_2 > \text{CdSO}_4 \cdot n\text{Cd}(\text{OH})_2$. Ir spectra of hydroxosulfates are very complex due to interactions of $\nu(\text{OH})$ with lattice frequencies and due to various natures of the OH present. Thermal stability of hydroxo compds. decreases in the order: $\text{CdSO}_4 \cdot \text{Cd}(\text{OH})_2 > \text{CdSO}_4 \cdot n\text{Cd}(\text{OH})_2 > \text{Cd}(\text{OH})_2$.
HMJR

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REEL/FRAME
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172 032 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THERMAL DECOMPOSITION OF THE DIMETHYLENE ETHER BOND IN POLYMERS -U-
AUTHOR--(05)--LEVSKIY, V.M., YATSENKO, E.A., GRABARNIK, L.G., SALTIBAYEV,
D.K., MEYSERAYEV, M.ZH.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM, 1970, 20(2), 79-80
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THERMAL DECOMPOSITION, METHYLENE, ETHER, POLYMERIZATION,
GLYCOL, PYROLYSIS, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0265 STEP NO--UR/0360/70/020/002/0072/0030
CIRC ACCESSION NO--AP0126037
UNCLASSIFIED

2/2, 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

IRC ACCESSION NO--AP0126037

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMER OF P, HOCH SUB2 C SUB6
H SUB4 CH SUB2 OH IN BULK AT 140DEGREES IN THE PRESENCE OF P, HEC SUB6 H
SUB4 SO SUB3 H GAVE RCH SUB2 OCH SUB2 R PRIME (I). THE PYROLYSIS
PRODUCTS OF I OBTAINED IN VACUUM AT SMALLER THAN OR EQUAL TO 180DEGREES
CONTAINED POLYMERIC ALDEHYDES DUE TO HOMOLYTIC SPLITTING OF I RCH SUB2
AND R PRIME CH SUB2 O, WHICH INTERACT, GIVING R PRIME CHO AND RME. AT
260-360DEGREES, R PRIME CH SUB2 O IS DISPROPORTIONATED TO R PRIME CHO
AND R PRIME CH SUB2 OH, DETECTABLE BY IR SPECTROSCOPY. FACILITY:
INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

055 333.171.017
AZIMOV, S. A., MYALKOVSKIY, V. M., NURITDINOV, Kh., RASULKULOV, M. S.,
ABDULLAYEV, A. M., BEYSENBAYEV, R. U., GAVRILIN, Ye. V., TALIPOV, D. A.,
MULLAZHONOV, E. Zh., TILLEYEV, T., RAHMANOV, Zh., USEROV, R.,
ULIMAYEVA, F. A., KHEN, E., YULDASHBAYEV, T. S., Institute of Nuclear
Physics of the Academy of Sciences Uzbek SSR

"Study of the Characteristics of High-Energy Interactions of Pions and
Nucleons"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 36,
No. 8, Aug 72, pp 1626-1631

Abstract: Experimental data obtained at the Kum-Bel' High-Altitude
Station of the Physicotechnical Institute of the Academy of Sciences
Uzbek SSR are reported. The station is 3200 m above sea level. The
setup contains three series of wide-gap spark chambers with effective
areas of 2 m² placed above and below the target. The Cerenkov spectro-
meter with total absorption and an ionization calorimeter with an area of
10 m² were used to measure the primary energy E_0 . Up to the present time
experimental data obtained over 630 hours of operation of the device have
been processed, with a high-voltage pulse being supplied to the electrodes of
the spark chambers. Showers with an energy of >200 Gev generated in the target
were selected for analysis. The following ratio was obtained for the number
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USSR

AZIMOV, S. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 36, No 8, Aug 72, pp 1626-1631

of primary charged N_c and neutral N_n particles: $N_c/N_n = 2.3 \pm 0.3$; this shows that the proportion of charged particles is $\sim 34\%$ of all nuclear active particles, thus making it possible to study pion-nuclear collisions by comparing the characteristics of the interaction of charged and neutral primary particles. A weak functional dependence between the inelasticity coefficient $\langle K_{\pi} \rangle$ and the atomic number of the target nucleus and a strong functional dependence between this coefficient and the nature of the primary particles were obtained for interactions of hadron with $E_0 > 200$ GeV. $\langle n_s \rangle$ is almost a logarithmic function of E_0 . The average multiplicity in the interaction of pions with neutrons in paraffin is identical within the experimental limit. A considerable azimuthal effect was observed for the angular distribution of secondary particles. The azimuthal effect has its greatest value for showers with $n_s = 8-15$, or a multiplicity close to average.

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USSR

UDC 539.171.017

ABDULLAYEV, A. M., AZIMOV, S. A., BEYSEMBAYEV, R. U., BELITSKIY, M. T.,
MULLIZHANOV, E. ZH., MYALKOVSKIY, V. M., TALPOV, T. A., TILAYEV, T.,
UMEROV, R., KHEN, E., and YULDASHBAYEV, T. S.

"Study of Characteristics of Inelastic Interactions of Cosmic-Ray Particles
in the 10^{11} to 10^{12} -ev Energy Range"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10,
Oct 71, pp 2065-2068

Abstract: Experiments that were performed at the high-altitude test station
(3,200 m.) at Kum-Bel' in Uzbekistan are described. The purpose of the exper-
iments was to investigate the angle of arrival and the energy characteristics
of interactions of pions and nucleons with light and heavy nuclei at 2×10^{11}
to 2×10^{12} ev and the mechanism of generating muons at energies above 2×10^{12}
ev. Equipment consisted of spark chambers, located above and below the target
(paraffin wax, carbon, and iron), a Čerenkov spectrometer of full absorption,
and an ionization calorimeter. This complex method of measurements was found
convenient for use in various modes of operation. A detailed description of
various parts of the installation and their disposition is given in the paper.
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USSR

ABULLAYEV, A. M., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2065-2068

Joint operation of ionizing calorimeters and spark chambers is normally difficult because of the need for high voltage on the calorimeter electrodes, combined with the time lag of the input pulse from the spark chambers, amounting to over 20 microseconds. This difficulty was avoided in the present experiments by storing pulses in memory cells, with the subsequent input of a high-voltage pulse of about 120 kv. Operation was controlled by a master-pulse, prior to which all parts of the equipment were kept inoperative.

Results of 200 hours of the joint operation of a Čerenkov spectrometer and ionizing calorimeter, with graphite used as the target, have been processed so far. For analysis, showers with energy above 1.5×10^{11} ev were selected, 130 of them having been observed. The ratio of charged to neutral nucleons were determined and, from it, the fraction of charged pions of the total nucleus-active stream of particles. The inelastic coefficient for the formation of π^0 -mesons was computed from the experiments related to the interaction of neutral particles with nuclei of graphite.

It is concluded that the combination of ionizing calorimeter with Čerenkov spectrometer of full absorption for the simultaneous determination of energy of primary particles made it possible to determine the fraction of $2/3$

USSR

ABULLAYEV, A. M., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2065-2068

energy supplied by the ionizing particles $\tilde{\eta}$, since a Čerankov spectrometer measures only the energy emitted by relativistic particles. It was found that for the mean energy of primary particles of 350 Gev the energy part lost on nuclear fissions in the spectrometer, with CCl_4 as the light emitter, is $\tilde{\eta} = 0.25$,


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USSR


AZIMOV, S. A., BEYSENBAYEV, R. U., MULLADZHANOV, E. ZH.,
CHUDAKOV, V. M., YUDASHBAYEV, T. S., Institute of Nuclear
Physics, Academy of Sciences, Uzbek SSR

"Azimuthal Relations and Fireballs"

Moscow, Yadernaya Fizika, Vol 11, No 6, 1970, pp 1248-1254

Abstract: Azimuthal correlations are detected in nuclear inter-
actions at energies of hundreds of Gev. From the point of view
of a model of a single fireball, the cause of the correlations
may be its formation and "rotation."

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USSR

UDC 546.26:118.07

RYSKULOV, T., REYSHEKEYEV, ZH., KOZHAKHMETOVA, R., DZHUNDUBAYEV, K., and
ASHIMBAYEVA, B., Institute of Organic Chemistry, Academy of Sciences Kirgiz.
SSR

"Organophosphorus Derivatives of Piperazines"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 4, Jul-Aug 73, pp 47-49

Abstract: Reaction of monosubstituted amyl- and benzylpiperazines with phosphonic acid dichlorides and phenylamidophosphoric acid chloride in presence of dry triethylamine yields novel amidophosphonates and amidophosphates. All of the amidophosphonates are crystalline products; the di(1-amylpiperazinyl-4)phenylamidophosphate is an oily product which can be isolated by conversion to a picrate. Another possible synthetic method for amidophosphates is based on the reaction of monoamylpiperazine with dialkyl(aryl)phosphoric acid chlorides in benzene and in presence of dry triethylamine.

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USSR

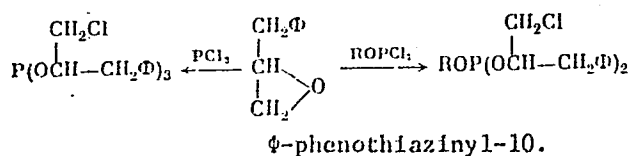
UDC 547.26'118

DZHUNDUBAYEV, K. D., ALDASHEVA, A., BEYSHEKEYEV, Zh., KOZHAKHMETOVA, R. I.,
Institute of Organic Chemistry, Academy of Sciences of the Kirgiz SSR

"Synthesis of Phosphites Based on 10-(2,3-Epoxypropyl)phenothiazine"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 340-342

Abstract: Neutral phosphites are synthesized by the reaction of 10-(2,3-epoxypropyl)phenothiazine with phosphorus trichloride and various alkyl-(aryl)phosphorous acid dichlorides. The reaction takes place in the presence of small quantities of hydrochloric acid:



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USSR

DZHUNDUBAYEV, K. D., et al., Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 340-342

The reaction with phosphorus trichloride yields tri[1-chloro-3-(phenothiazinyl-10)propyl-2] phosphite, while the acid dichloride gives di[1-chloro-3-(phenothiazinyl-10)propyl-2] alkyl(aryl) phosphites. The structure of the compounds was identified by IR-spectroscopy.

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UDC 547.26.118.07

RYSKULOV, T., BEYSHEKEYEV, ZH., and DZHUNDUBAYEV, K. D., Institute of Organic Chemistry, Academy of Sciences KirgizSSR

"Synthesis of Phosphates and Thiophosphates Based on 1-Benzyl-4-(β -hydroxypropyl)-piperazine"

Frunze, Izvestiya Akademii Nauk KirgizskoySSR, No 3, May-Jun 73, pp 49-50

Abstract: Searching for new physiologically active compounds, several phosphate and thiophosphate derivatives of 1-benzyl-4-(β -hydroxypropyl)-piperazine (I) were synthesized by reacting (I) with dialkyl(aryl)phosphoric and thiophosphoric acid chlorides in benzene and in presence of triethylamine. No biological data are reported.

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USSR

UDC 542.91+661.718.1

DZHUNDUBAYEV, K. D., BEYSHEKEYEV, Zh., ALDASHEVA, A., KOZHAKHMETOVA, R. I.,
SULAYMANOV, A., TOKTOBEKOVA, T., Institute of Organic Chemistry, Academy of
Sciences of the Kirgiz SSR

"Synthesis of Mixed Phosphites Based on 10-[β -Hydroxypropyl(ethyl)]phenothia-
zine"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 337-340

Abstract: The authors studied the reaction of 10-(β -hydroxypropyl)pheno-
thiazine and 10-(β -hydroxyethyl)phenothiazine with alkyl(aryl)phosphorous
acid dichlorides, phosphorus trichloride and dimethylamidophosphorous acid
dichlorides:

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USSR

UDC 542.91+661.718.1

~~BEVSHCHEV, ZH.~~, DZHUNDUBAYEV, K., ALDASHEVA, A., KOZHAKHMETOVA,
R. I., TORTOBEKOVA, T.

"Phosphorylation of 10-(2,3-Epoxypropyl)phenothiazine"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971,
pp 2207-2209

Abstract: In a continuing search for physiologically active phenothiazine derivatives, a study was made of the reaction of 10-(2,3-epoxypropyl)phenothiazine with β -alkoxyvinylphosphonic anhydrides, thio- and dithioanhydrides. A series of previously unknown crystalline heterocyclic esters were prepared by the cited reaction. The reaction with thioanhydrides gave the esters with a 1,2,3-oxaphosphathiazole ring structure, as indicated by their IR spectra. The yields, mp, and elemental analysis data of the products are tabulated and their preparation is described.

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- 55 -

USSR

UDC 542.91+661.718.1

PETROV, K. A., KHORKHOYANU, L. V., BEYSHEKEYEV, Zh., and DZHUNDUBAYEV, K.

"Phosphorus-containing Phenothiazine Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 1, Jan 71, pp 110-114

Abstract: In searching for physiologically active substances the authors synthesized previously unknown phosphates, phosphonates and thiophosphonates of phenothiazine derivatives with residues of phosphorus acids bonded to the nitrogen atom of the phenothiazine nucleus by a hydrocarbon chain. [β -(Phenothiazinyl-10) isopropyl] phosphates were obtained by the reaction of chlorophosphates with 10-(β -hydroxypropyl)phenothiazine. Bis[β -(phenothiazinyl-10)isopropyl] methylphosphonate was obtained from methylphosphonic acid dichloride and 10-(β -hydroxypropyl)phenothiazine. [β -(Phenothiazinyl-10)isopropyl] diethylthiophosphinate was obtained from the diethylamide of diethylphosphinous acid and 10-(β -hydroxypropyl)phenothiazine with subsequent addition of sulfur to the phosphinite. Sodium phenothiazine reacts with diethyl esters of chloromethyl- and β -chloroethylphosphonic acids to give N-ethylphenothiazine and diethyl [β -(phenothiazinyl-10)ethyl] phosphonate respectively. The oxidation of [β -(phenothiazinyl-10)isopropyl] phosphates was studied.

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USSR

UDC 616.993.162-022.39-084.47-036.8

SERGIYEV, P. G., ~~BEYSLEKHEM, R. I.~~, MOSHKOVSKIY, Sh. D., DEMINA, N. A.,
KELLINA, O. I., SHUYKINA, E. Ye., SERGIYEV, V. P., DUKHANINA, N. N., TRIYERS,
I. I., SHCHERBAKOV, V. A., YARMUKHAMEDOV, M. A., USKOV, N. Ye., LOSIKOV, I. N.,
and NEDOSPELOVA, Ye. I., Institute of Medical Parasitology and Tropical Medicine
imeni Ye I. Martsinovskiy, Ministry of Health USSR, Moscow

"Results of Mass Vaccinations against Zoonotic Cutaneous Leishmaniasis"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5,
Sep/Oct 70, pp 541-551

Abstract: Preventive mass vaccinations with a virulent strain of Leishmania tropica major were found to give reliable protection against cutaneous leishmaniasis. Only virulent strains can be used for vaccination. The degree of inoculation with such strains is almost 100%, the inoculative process having, as a rule, a favorable effect. The maximum size of the vaccination lesion does not exceed 2 cm in diameter in 3/4 of the subjects vaccinated. In practically all cases, the process does not last more than 5-6 months. Morbidity occurred in the group vaccinated with the low-virulence strain, among those without lesions, and among those whose lesions were less than 0.5 cm in diameter.

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- 24 -

USSR

SERGIYEV, P. G., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni,
Vol 39, No 5, Sep/Oct 70, pp 541-551

Secondary pyococcal infections represented the only complications observed; allergic exanthem was noted occasionally. In order to prevent local and general allergic reactions after vaccination, it is necessary to exclude persons who have had cutaneous leishmaniasis. If past disease cannot be revealed by means of anamnesis or medical examination, the intracutaneous leishmanin test is recommended. The level of the virulence in inoculative strains should be periodically tested, since insignificant initial virulence or its weakening during culturing make a given strain unfit for preparation of inoculum.

2/2

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--AUTOMATIC CONTROL OF THE PARAMETERS OF OXYGEN CONVERTER MELTING -U-

AUTHOR--(05)-BEYTELMAN, L.S., BELENKIY, YU.YA., IZMAYLOV, G.A., YERMOLAYEV,
D.A., KULKOV, S.V.
COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(3), 225-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL OXYGEN CONVERTER, METAL MELTING, AUTOMATIC CONTROL
SYSTEM, STEEL MANUFACTURE PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1993

STEP NO--UR/0133/70/030/003/0225/0228

CIRC ACCESSION NO--AP0118952

UNCLASSIFIED

2/2 018
CIRC ACCESSION NO--AP0118952

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SCHEME OF AN AUTOMATIC CONTROL IS PRESENTED, IN WHICH ALL MAJOR PARAMETERS OF BLOWING ARE CONTROLLED AS A FUNCTION OF GAS VOL. AND ITS CO SUB2 CONTENT. INDUSTRIAL TRIALS SHOWED THE VELOCITY AND ACCURACY OF THE SYSTEM SUFFICIENT FOR THE PRODUCTION OF THE DESIRED BLOWN METAL.

UNCLASSIFIED

USSR

UDC 613.816:374

BEYTEL'MAN, M. C., and VASILEVSKAYA, A. D.

"Concerning the Content and Methods of Temperance Propaganda"

Moscow, Zdravookhraneniye Rossiyskoy Federatsii, No 5, 1970, pp 16-19

Abstract: The desiderata and shortcomings of educational campaigns dealing with alcoholism are discussed, with critical reference to several authors in the field. Drunkenness, a social phenomenon, and alcoholism, a true disease must be distinguished. The lack of systematic efforts and a scientific approach to alcoholism are deplored. The need for evaluating the effectiveness of treating alcoholism is urged. Scientific indices by which to measure the effectiveness are the number of alcoholics asking for help, and the percentage of relapses. The need for a broad educational campaign that is accurate and scientific as well as comprehensible to the public is emphasized. The need for winning over the public, for establishing a positive relationship with it, is also stressed. Avoidance of extreme, unrealistic, unconvincing slogans is recommended. The danger of regular use of alcohol as a possible cause of alcoholism is pointed out. An all-out campaign to stop completely the use of alcohol is considered unrealistic. Cooperation of medical and administrative personnel of various enterprises is urged.

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1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DRYING GRANULATED FERTILIZERS IN ROTARY DRIES -U-

AUTHOR--(04)--MAYZEL, YU.A., GOLUBEVA, A.M., YEROFEYEVA, M.V., BEYZERMAN,
L.R.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PRGM. (MOSCOW) 1970, 46(2), 117-21

DATE PUBLISHED--70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--CHEMICAL DRYING, PHOSPHORUS FERTILIZER, PARTICLE SIZE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0175

STEP NO--UR/0064/70/046/002/0117/0121

CIRC ACCESSION NO--AP0123946

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123946

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN DRYING OF GRANULATED AMMONIATED SUPERPHOSPHATE FERTILIZERS IN ROTARY DRUM DRIERS, THE PARTICLE SIZE OF THE GRANULES CAN EITHER DECREASE OR INCREASE (DEPENDING ON THE EXACT NATURE OF THE FERTILIZER, THE RAW MATERIALS USED, THE INITIAL GRAIN SIZE, ETC.) BUT IN BOTH CASES THE RELATION BETWEEN THE F_{SUB1} - F_{SUB2} RATIO (WHERE F_{SUB1} AND F_{SUB2} ARE THE INITIAL AND FINAL EQUIV. SURFACE AREAS OF THE GRANULES) AND THE THERMAL LOAD DURING DRYING IS SATISFACTORILY DESCRIBED BY A PARABOLIC (DESCENDING OR ASCENDING) CURVE. A METHOD FOR THE AUTOMATIC CONTROL OF THE DRYING PROCESS ON THE BASIS OF PARTICLE SIZE IS DESCRIBED.

UNCLASSIFIED

AA0052665

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-7C

241296 PILE-DRIVING SUSPENSION ARRANGEMENT
differs from that in Pat. 233536 by
hinging carriage 7 to the driving jib 8, at which
and there is a stop made in the form of an
electric jack electrically connected to the switch
terminals placed in a hinged movable carriage,
allowing free motion of the driving jib 8 in the
vertical plane. This improves the construction.
20.4.67. as 1164347/29-14, Add to 233536, LOSHAK,
I.A. et al. "Glavsevkavstroya" Office (15.8.69)
Bul. 13/1.4.69. Class 84c, Int. Cl. E 02d.

Loshak, I. A.; Zal'tsman, T. M.; Grinberg, L. I.; Mokryakov, V. M.;
Mazyar, Ye. Z.; Beyzym, Ya. T.
Konstruktorskoye Tekhnologicheskoye Byuro Spetsializirovannogo
Upravleniya Mekhanizatsii Stroitel'stva Glavsevkavstroya

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19821415

USSR

UDC 621.791.011.075.004.1

BEZBAKH, D. K., Engineer

"Effective Efficiency of Heating a Part by a Welding Arc When Working in the Wind"

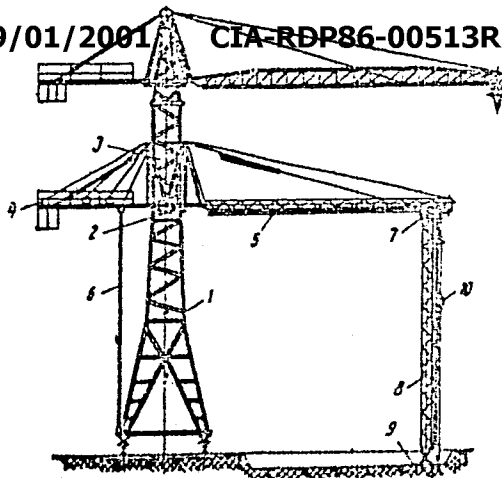
Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 2-3

Abstract: A method is presented for studying the effective efficiency of heating a part by a welded arc subject to the influence of wind during manual welding using type UONI-13/45 electrodes 4 mm in diameter and semi-automatic welding in CO₂ using PP-Yu8 wire. The quantity of heat introduced to the specimen was determined by calorimetry, after which the effective efficiency of heating of the product was calculated using formulas presented in the work. The effective efficiency of heating in winds up to 7 m/sec decreases by an average of 3-5% for T-welding and 6-10% for butt welding. Welding in a medium of CO₂ produces a somewhat higher effective efficiency of heating.

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APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002200410004-8"



2/2

19821416

1/2 021 UNCLASSIFIED
TITLE--GAS VELOCITIES NEAR THE WELDING ARC -U-

PROCESSING DATE--09OCT70

AUTHOR--~~BEZBAKH, D. K.~~

COUNTRY OF INFO--USSR

SOURCE--SVAR. PROIZVOD. 1970, (2), 12

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ARC WELDING, GAS WELDING, CARBON MONOXIDE, CARBON DIOXIDE,
HYDROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0297

STEP NO--UR/0135/70/000/002/0012/0012

CIRC ACCESSION NO--AP0113227

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113227

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD WAS DEVELOPED FOR DETG. THE GAS VELOCITIES NEAR THE WELDING ARC DURING WELDING WITHOUT ADDNL. PROTECTION. EXPTS. HAVE BEEN CARRIED OUT WITH THE WIRE PP-YU 8 2 MM IN DIAM. THE FORMED GAS CONTAINED: CO 58, CO SUB2 21, H SUB2 0 14, AND H SUB2 7PERCENT, ITS MEAN VELOCITY WAS 1-2 M-SEC, AND TEMP. 980 PLUS OR MINUS 20DEGREES. AN INCREASE IN THE CURRENT LED TO AN INCREASE OF GAS VELOCITY. A. SIMECEK.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INTERACTION OF SULFUR COMPOUNDS OF COAL WITH SOME MINERAL
SUBSTANCES DURING THERMAL BREAKDOWN -U-
AUTHOR--(04)-BRUK, A.S., KUTOVCEY, P.M., GONCHAROV, V.F., BEZBAKH, ZH.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TVERD. TOPL. 1970, (1), 66-70

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS, MECH., IND.,
CIVIL AND MARINE ENGR
TOPIC TAGS--SULFUR, COAL, BLAST FURNACE, COKE, IRON, QUALITY CONTROL,
CALCIUM COMPOUND, CHEMICAL SEPARATION, HYDROGEN SULFIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1989/0756

STEP NO--UR/0467/70/000/001/0066/0070

CIRC ACCESSION NO--AP0107298

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DECREASING THE S CONTENT IN BLAST FURNACE COKE MAY IMPROVE THE IRON QUALITY. WEST DONETSK COAL, EASILY SINTERING, CONTG. 2.64PERCENT S AND 39.4PERCENT VOLATILES, WAS TREATED VARIOUSLY WITH SiO_2 , FE, AND A MAGNETITE CONC., CONTG. 69PERCENT FE, PARTLY AS FeO . THE S CONTENT IN THE INITIAL MIXTS., IN THE INTERMEDIATE PRODUCTS OF CONTINUOUS COKING, AND IN THE RESULTING COKE ARE PLOTTED. MAX. FORMATION OF H_2S PROCEEDED THROUGH THE STEPS OF RAPID HEATING AND ISOTHERMAL THERMAL TREATMENT UNDER THE ACTION OF HIGHLY ACTIVE H. ALL ADDITIVES EXCEPT FE FACILITATED THE GASIFICATION OF S BEFORE CALCINING, WHILE AFTERWARDS CHIEFLY NONVOLATILE S COMPS. WERE FORMED. USE OF HIGH S COALS FOR PREPN. OF BLAST FURNACE COKE IS POSSIBLE ONLY WHEN THE COALS ARE EASILY SINTERING. ADDN. OF CA COMPS. INCREASED THE AMT. OF S REMAINING IN THE COKE, BUT IN THE FORM OF CAS, WHICH WAS NOT DETRIMENTAL TO IRON QUALITY.

UNCLASSIFIED

BEZBORODOV, A.

BIOCHEMICAL, PHYSIOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS
OF CONTINUOUS CULTURE OF A LYSINE PRODUCER.
G. Mezina, M. Buklica, S. Selca, A. Alexandrova, A. Bezborodov,
V. Masera

G14-14

The August Kirichenstein Institute of Microbiology
Latvian Academy of Sciences, Riga, Latvia, USSR

Kinetics of L-lysine biosynthesis by the auxotrophic mutant
Brevibacterium aureum was studied. The experiments were performed in
a complex (molasses-molasses) medium balanced with the help of retatable
method of the medium basic ingredients planning. The continuous
fermentation was realized in accordance with chemostat principle;
molasses concentration (S) and aeration intensity (P_{O_2}) were used
as growth limiting factors.

It was found that the cellular RNA content is in ordinal rela-
tion to the growth rate (μ) and the medium growth limiting factor.
Protein and RNA content in the biomass are more stable. At higher
growth rate the constructive metabolism and energetic processes in
a cell increase. Close correlation is stated between the L-lysine
biosynthesis and citrate dehydrogenase, lactate dehydrogenase and
total reductive activity of cells.

Morphologic changes of cells in various conditions of cultiva-
ting were studied by the electronic microscopy method.
The continuous L-lysine biosynthesis process kinetics has
shown that the values of the specific growth rate, specific lysine
biosynthesis ability, metabolic coefficients, economic coefficients
and culture productivity depend on the flow rate and the growth
limitation.

So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference
Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

UDC 668.394

USSR

BEZBORODOV, A. M., Professor

"Microbiological Synthesis of Amino Acids"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleyev,
Vol 17, No 5, 1972, pp 533-537

Abstract: The article describes cultures, the biogenesis mechanism and some technological operations for the production of amino acids by the method of microbiological synthesis, particularly glutamic acid, lysine and tryptophan.

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BEZBORODOV, A. M.

G5 4

G5-6

DISTRIBUTION OF PRODUCERS OF ALKALOIDS AMONG THE FUNGI.

A. M. Bezborodov, I. I. Guseva, O. V. Krepisheva, N. E. Bechrakhanova.

Institute of Biochemistry and Physiology of Microorganisms,
Academy of Sciences USSR, Puschino.

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An ability of different representatives of fungi to synthesize alkaloids under the submerge and surface culturing was studied. Two kinds of media were used for the growth of fungi: (a) synthetic medium, containing mannite and succinic acid as the carbon source; (b) complex one with corn-steep extract, peptone and glucose.

Medium and mycelium were subjected to an analysis for alkaloid content. Mycelium was homogenized. Then alkalescence and extraction by the chloroform-isobutanol mixture (4:1) were carried out. After that alkaloids were transferred into an aqueous solution by acidification with sulphuric acid. The procedure was repeated twice. Further an analysis was carried out.

Qualitative alkaloid content tests were put with 6 reactions typical of alkaloids and close related to them compounds. As the result it was stated that 27 strains of 103 ones examined belonging to Penicillium, Aspergillus, Fusarium, gave all the 6 reactions, 1 gave 5 positive reactions and 19 did 3.

Most of extract didn't give colorimetric reaction typical of indole derivatives. Chemical nature of compounds obtained is under investigation.

So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference
Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--A STUDY ON THE CONDITIONS FOR BIOSYNTHESIS OF UBIQUINONE,8 AND
VITAMIN K SUB2 BY SERRATIA MARCESCENS -U-
AUTHOR-(02)-BEZBORODOV, A.M., CHERMENSKAYA, T.S.

COUNTRY OF INFO--USSR

B

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 316-321

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOSYNTHESIS, VITAMIN, CULTURE MEDIUM, GLUTAMIC ACID, GLUCOSE,
AMMONIUM PHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1415

STEP NO--UR/0220/70/039/002/0316/0321

CIRC ACCESSION NO--AP0054278

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054278

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. A STUDY ON THE CONDITIONS FOR GROWTH OF SERRATIA MARCESCENS 42 AND FOR BIOSYNTHESIS OF UBIQUINONE,8 AND VITAMIN K SUB2 (40) HAS SHOWN THAT OPTIMAL VALUES OF PH FOR FERMENTATION WERE 7.0-9.0. POOR GROWTH OF THE CULTURE AND LOW PRODUCTION OF VITAMIN K SUB2 (40) WERE REGISTERED AT PH 3.0. THE HIGHEST YIELD OF BIOMASS, Q,8 AND VITAMIN K SUB2 (40) WAS FOUND DURING THE STATIONARY PHASE OF GROWTH (THE 2-30 DAYS) WHEN THE MAIN COMPONENTS OF THE MEDIUM HAVE BEEN CONSUMED. CHANGES IN THE CONCENTRATION OF GLUCOSE AND AMMONIUM PHOSPHATE IN THE MEDIUM AFFECTED GROWTH OF THE CULTURE BUT EXHIBITED ALMOST NO EFFECT UPON BIOSYNTHESIS OF Q,8 AND VITAMIN K SUB2(40). MEDIA CONTAINING GLUTAMIC ACID (20-50 G-L) STIMULATED MAXIMAL ACCUMULATION OF BIOMASS AND ITS HIGH PRODUCTIVITY WITH RESPECT TO Q,8 AND VITAMIN K SUB2(40). NO CORRELATION WAS ESTABLISHED BETWEEN CHANGES IN THE RATIO VITAMIN K SUB2(40)-Q,8 AND COMPOSITION OF THE MEDIA OR THE GROWTH PHASE OF THE CULTURE. THE RATIO OF CONCENTRATIONS K SUB2-Q,8 WAS 20-50PERCENT IN DIFFERENT EXPERIMENTS.

UNCLASSIFIED

BEZBORODOVA, S.I.

EXTRACELLULAR RIBONUCLEASE OF *PENICILLIUM BREVICOMPACTUM*.
S.I. Bezborodova, T.V. Il'ina, V.I. Krut'ko, V.E. Goloschenko.
Institute of Biochemistry and Physiology of Microorganisms,
USSR Academy of Sciences, Puschino, USSR.

G7

A NUCLEA
R. Fujita
Research

The ability of *Penicillium* fungi to release extracellular RNases with optimum pH in mild acidic medium has been established.

The extracellular RNase of *Penicillium brevicompactum* has been purified to homogeneous state. Optimum pH, specificity, mode of action on native substrates, stability, thermostability, influence of SR-reagents and urea have been examined as well as inhibition by products of reaction and by their analogues.

pH-dependence of kinetic parameters of transferase and hydrolase steps of reaction has been determined using low molecular weight substrates (Cp, Up, Ap and Gp).

The amino acid composition of the enzyme has been studied and the effect of carboxymethylation, photooxidation and chemical reduction on the enzyme activity has been investigated.

On the basis of data obtained one may draw a conclusion that *Pen. brevicompactum* RNase is similar to RNase T₂ of *Aspergillus oryzae* and to RNase A of *pan. saliv.* Histidine residue and carboxylic group appear to be in the active site of the enzyme.

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So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference
Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

Phytology

USSR

UDC 577.150.6:582.28

BEZBORODOVA, S. I., and IL'INA, T. V., Institute of the Biochemistry and Physiology of Microorganisms, Academy of Sciences USSR, Pushchino-na-Oke

"Extracellular Phosphomonoesterases Produced by *Fusarium*"

Moscow, Mikrobiologiya, Vol 39, No 5, Sep/Oct 70, pp 741-747

Abstract: Nine of 13 fungi of the genus *Fusarium* released both acid and alkaline phosphomonoesterases (PME's) into the culture fluid of a complex medium. *Fusarium virio* did not release PME and *F. solani* released only a small amount. Acid PME's predominated in all of the fluids investigated. Optimum pH, thermolability, and the effect of various substances (including bivalent metals) on *F. oxysporum* and *F. sentectum* PME were studied. Acid PME's had an optimum pH of 5.2; 7.8 was the optimum pH for alkaline PME's of *F. oxysporum*. The PME's were thermolabile at pH value from 2.8 to 9.0. The acid PME's were not inhibited by EDTA or citrate; the alkaline PME's were. Phosphate inhibited the activity of both acid and alkaline PME's. Cobalt, calcium, and magnesium activated the PME of *F. oxysporum* to a higher degree than that of *F. sentectum*. The extracellular alkaline PME of *F. oxysporum* was inhibited by inorganic phosphate ions; the acid PME was not. Most of the investigated cultures of the genus *Fusarium* thus produce and release acid and alkaline PME's into the culture fluid. The acid PME's appear earlier and in larger quantities than do the alkaline PME's.

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USSR

UDC: 621.315.592

ZIBOROV, A. I., BEZBORODOVA, V. M., and KIREYEV, P. S.

"Cd_xHg_{1-x}Se Photosensitivity Spectra"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2045-2047

Abstract: This brief communication provides the results of experiments designed to investigate the photosensitivity spectra of Cd_xHg_{1-x}Se compounds made by the Bridgman method in a vertical oven. Formation of the solid solutions of cubic structure for values of x up to 0.8 was roentgenographically confirmed, and the measurements made were subject to an average error of ±2.5%. A description of the preparation procedure for the specimens is given; their photosensitivity spectra were obtained with a device using the IKS-21 spectrometer, narrow-band amplifier U-2-6, and synchronous detector SD-1. The spectra were shifted to the long-wave side with increasing mercury content of the solution; at the same time, the bandwidth increased and the photosensitivity dropped with increasing shadow conductivity. Curves are plotted for the maximum spectral distribution energy as a function of the specimen composition at 77° K, and for other obtained results.

1/1

BEZCHASTNOV I. M.

Astronomy

I. ASTRONOMY

News

Session of the All-Union Astronomical and Geodetic Society

More than 120 representatives of the VAGO (All-Union Astronomical and Geodetic Society) met in Moscow in February 1970. A regular plenary session of the VAGO Central Committee was held.

In addition to the traditional general sessions devoted to the comprehensive report of the Central Committee and its discussion, three sessions were in session: astronomical, geodetic and instrumental-methodological, as well as a session of a group of inventors of nocturnal clouds.

The plenary session heard reports by N. A. Dirikis and V. P. Terevich on the work of the Lithuanian and Georgia Divisions of the VAGO. In the reports and during the discussion much attention was given to people's observation. Plans have been formulated for people's observation, but inadequate funds are available for their construction, and most importantly, it is impossible to acquire telescopes. It is true that in Moscow, Leningrad, Riga and some other cities amateur astronomers are fabricating homemade reflecting telescopes, but in insufficient numbers, and therefore the industrial production of telescopes for people's observation is essential.

(One of the reports of this journal are already acquainted with plans for people's observation to be carried out under the direction of I. M. Bezchastnov. See Zvezdy i Nebesnye Tela, No. 2, 1968, p. 75.)

At the plenary session a report was given by P. Z. Aramov, director of the Institute of Geodesy, on the work of the Institute. He is in charge of the construction of a planet telescope (designed by P. P. Aramov and I. M. Bezchastnov). In the future plans call for building a larger telescope.

JPRS 51452
26 Sep 71

Philosophical problems in astronomy were discussed in reports by V. V. Kozlovskiy, S. G. Sudakov and K. A. Portsevskiy told about the objectives of the USSR in relation to the 100th anniversary of the birth of Vladimir I. Vernadsky.

D. Ya. Yartsev, President of the VACO, reviewed recent data on Venus and Mars. He attributed the high surface temperature of Venus to a singular greenhouse effect in its atmosphere and exhibited beautiful photographs of the Martian surface. V. P. Lavrov, together with V. P. Yartsev, gave a report entitled "Photography of the Moon and Earth from Artificial Satellites." This was an exceptionally interesting and detailed analysis of excellent color photographs of the moon and our planet.

Those participating in the plenary session attentively heard a report by V. I. Prokhorov on the objectives of scientific research work in the field of aerospace engineering.

(An article based on this report will be published in Zeniya 1
November 1964.)

The methods of amateur astronomers were reflected in the work of the astronomical section. A report by V. A. Kreshchenko, read by V. G. Pavlov, was devoted to the results of the participation of young astronomers, held in the summer of 1964 at Suzhukha (Astrakhan SSR). The observations, which were made by amateur astronomers were discussed by V. P. Tsvetich, and the discussion was led by V. Pavlov.

to the students of the instructional-methodological section the course with the teaching of aerobically in the schools. Many of the teachers said that they had to look on aerobically to meet the requirements of the Ministry of Education. It was the first time that the instructional methodological section of the Ministry of Education had published the manual of the instructional method (author Ye. P. Levitin) which has long been a well-known manual.

The secretary of the Organizational Committee for the fifth congress of the party, G. G. Kuznetsov, who in Sept. 1976 in Kazan, was announced at the literary festival and afterwards were handed out to full WAO members.

[illegible]

USSR

UDC 612.821.6+612.822.3

SHVYRKOV, V. B., and BEZLENEZHNYKH, B. N., Institute of Psychology, Academy of Sciences USSR, Moscow

"The Role of Analysors of Conditioned and Unconditioned Stimuli in the Functional System of a Conditioned Behavioral Act"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, No 1, Jan/Feb 73, pp 15-23

Abstract: Formation of a conditioned reflex is based not just on generalization and transformation of evoked potentials to light (used as the conditioning signal) but on the fact that the responses to the conditioning signal in the visual and somatosensory areas in the cortex become synchronous and identical in their configuration with the reactions initially occurring in response to the reinforcing electrocutaneous stimulation. The crucial aspect of this development is reached when, as a result of the training, the latent period of the evoked potentials coincides with the latent period of the motor reaction. Processes taking place during that interval do not occur in succession following recruitment of the individual structures along the reflex arc. Rather, the evoked potentials represent simultaneous activation of all structures in the visual and somesthetic cortex participating in the analysis and synthesis of afferent stimuli and in the process of making a decision and inducing the conditioned behavioral act.

1/1

- 43 -

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--COMPOUNDS OF CERIUM (III) OXALATE WITH HYDRAZINE -U-
AUTHOR-(04)-BEZDENEZHNYKH, G.V., KRYLOV, YE.I., SHAROV, V.A., NEUYMIN,
A.D.
COUNTRY OF INFO--USSR **B**
SOURCE--ZH. NEORG. KHIM. 1970 15(3) 629-32
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--TERNARY FLUID SYSTEM, IR SPECTROSCOPY, HYDRAZINE, OXALATE,
CERIUM COMPOUND, METAL COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1871 STEP NO--UR/0078/70/015/003/0629/0632
CIRC ACCESSION NO--AP0115690
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115690

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEM CE SUB2-(C SUB2 O SUB4)SUB3. 10.3H SUB2 O-N SUB2 H SUB4 -H SUB2 O WAS STUDIED BY IR SPECTROSCOPY. THE COMPLEXES ARE FORMED (MU SUREFF, CURIE TEMP.): CE SUB2 (C SUB2 O SUB4). 6N SUB2 H SUB4. 7.4H SUB2 O, 2.61, 18DEGREES; CE SUB2(C SUB2 O SUB4)SUB3. 4N SUB2 H SUB4. 9H SUB2O (I), 2.37, MINUS 40DEGREES; CE SUB2(C SUB2 O SUB4)SUB3. 3N SUB2 H SUB4. 10.26 SUB2 O, 2.51 MUB, MINUS 10DEGREESK. H SUB2 O CONTENT OF THESE COMPLEXES CHANGED EASILY. THE IR SPECTRA OF THE COMPLEXES ARE GIVEN AND A PARTIAL INTERPRETATION OF THEIR BANDS IS TABULATED. IT IS ASSUMED THAT I HAS ONLY BIDENTATE N SUB2 H SUB4 AND THE REMAINING 2 COMPOS. HAVE MONO AND BIDENTATE N SUB2 H SUB4 LIGANDS.

UNCLASSIFIED

USSR

UDC 616.9-036.2-022.375

BEZDENEZHNYKH, I. S., and YELKIN, I. I., First Moscow Medical Institute imeni I. M. Sechenov

"The Effect of Migration and Other Factors on the Intensity of the Course of the Epidemic Process"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70, pp 5-8

Abstract: In a continuation of a discussion of the epidemic process begun in an earlier article published in this journal (1969, No. 2), the authors cite a variety of statistics on some of the factors that are increasing the incidence of infectious diseases and the likelihood of epidemics. Not only travel between countries but also migration within countries in assuming enormous proportions. For example, the number of people transported by railroads in 1966 increased from 248,500,000 in 1913 to 2,450,400,000 in 1966. Automobiles carried 2,048,900,000,000 persons in 1966 (as compared to none in 1913). Intraurban traffic and daily commuting are also adverse factors. For example, persons under 30 who spend more than one hour a day commuting are absent from work because of illness 1-1/2 times as often as those living within 30 minutes of their jobs. Crowded housing, vast increases in the number of children attending various institutions, and steady expansion of restaurants add to the potential threat of intestinal, respiratory, and other diseases.

1/1

USSR

UDC 614.4

BEZDENEZHNYKH, I. S., and YELKIN, I. I., Institute of Biophysics, Ministry of Health USSR, and First Moscow Medical Institute imeni Sechenov, Moscow

"Prospects for Improving Epidemiological Methods"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, Aug 70, pp 3-7

Abstract: A mathematical approach to epidemiology, combined with the traditional methods of observation and experimentation, will facilitate the analysis and prognosis of epidemic processes. Models of important infections can be used to forecast the incidence of a disease, carrier state, and changes in the immunological structure of the population, as well as in the gathering and analysis of information to evaluate an epidemic situation. The introduction of computers promises extensive benefits by permitting continuous observation not only of the course of a disease but also of the timeliness, scope, and quality of preventive measures. Before computers can be used effectively, however, the present disorderly flow of epidemiological information must be systematized.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE USE OF MATHEMATICAL METHODS IN EPIDEMIOLOGY, REPORT II,
EMPIRICAL AND THEORETICAL DISTRIBUTIONS -U-
AUTHOR--(05)-BEZDENEZHNYKH, I.S., BURGASOV, YU.A., YELKIN, I.I., LEONTYEVA,
L.G., TKACHEVA, M.N.
COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,
PP 3-9
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--EPIDEMIOLOGY, APPLIED MATHEMATICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0723

STEP NO--UR/0016/70/000/006/0003/0009

CIRC ACCESSION NO--AP0126435

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126435

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NECESSITY OF USING STATISTICAL METHODS IN THE FIELD OF EPIDEMIOLOGICAL INVESTIGATIONS IS SUBSTANTIATED. A METHOD AND INDICATIONS TO DETERMINATION OF THE MEAN VALUES, OF ASSESSMENT CRITERIA OF THE SIGN VARIABILITY, AND METHODS AN ANALYSIS OF DISTRIBUTION OF THE DATA IN SOLVING DEFINITE EPIDEMIOLOGICAL PROBLEMS ARE EXEMPLIFIED. THE LEADING ROLE PLAYED BY ANALYZING THE MATERIAL NATURE OF THE METHODS INVESTIGATED IN ASSESSING THE RESULTS OF STATISTICAL TREATMENT OF THE MATERIAL IS EMPHASIZED. FACILITY: TSENTRAL'NYY INSTITUT EPIDEMIOLOGII, MOSKVA.

UNCLASSIFIED

USSR

UDC: 621.315.592

BEZDETNYI, N. M., GORBATOV, G. Z., ZEYNALLY, A. Kh., and LEBEDEV, N. N., Azerbaydzhan State University imeni S. M. Kirov, Baku

"The Photo-EMF Spectral Distribution in SbSI"

Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972, pp 1189-1190

Abstract: This brief communication is the consequence of an earlier article authored by some of those named above (Bezdetnyy, N. M., et al, PTT, 13, 1971, p 1242) in which it was shown that the near-surface illumination of SbSI layers using light from the maximum sensitivity region produces a voltage and the flow of short-circuit currents in the external circuit. These are caused by the bend in the zones at the ends of the specimen. In the present communication, the authors investigate the spectral distribution of the photovoltaic output of the SbSI layers after dividing the specimens into two groups depending on the type of bending in the zones at the ends. The spectral distribution of both groups is shown.

1/1

UDC 519.2

USSR

BEZDETNYI, T. P.

"Some Representations for Two-Dimensional Distribution of Stationary Random Processes"

Teoriya veroyatnostey i mat. stat. Mezhd. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1972, vyp. 6, pp 18-23 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V81)

Translation: Let $\{\xi_n\}$ be a random series which is stationary in the narrow sense where each random variable ξ_n assumes the values $0, 1, 2, \dots, m-1$. For two-dimensional distribution $P_n(i, j) = P\{\xi_0 = i, \xi_n = j\}$, the representation of the following type was obtained:

$$P_n(i, j) = \frac{i+1}{m} \int_0^1 g_m(m^n x + j/m) df(x) \quad (i = 0, \dots, m-2; j = 0, \dots, m-1)$$

$$P_n(m-1, j) = P\{\xi_0 = j\} - \frac{1}{m} \int_0^1 g_m(m^n x + j/m) df(x) \quad (j = 0, \dots, m-1),$$

1/2

USSR

UDC 517.512+517.521.8+517.521.5

BEZDITNYI, T. P. *B*

"Theoretical, Probabilistic Interpretation of Some Generalized Methods for the Summation of Series"

Visnik Kiiivs'k un-tu. Ser. Matem. ta mekhan. (Bulletin of Kiev University. Series on Mathematics and Mechanics), 1969, No 11, pp 138-142 (from RZh-Matematika, No 3, Mar 1970, Abstract No 3B58)

Translation: A new method for the generalized summation (P-method) is developed and it is shown that consecutive application of the Hausdorff and the P-methods is equivalent to application of the P-method, but with a different probability distribution function. Also, the Hausdorff method is analyzed in its application to the summation of double series.

Author's summary

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESIS OF ALKYLPIRIDAZINES FROM FURANS -U-
AUTHOR-(02)-ZELENIN, K.N., BEZHAN, I.P.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(6), 1292-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SYNTHESIS, FURAN, HETEROCYCLIC NITROGEN COMPOUND,
ORGANIC AZINE COMPOUND, HYDRAZINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0226 STEP NO--UR/0020/70/191/006/1292/1294
CIRC ACCESSION NO--AT0132498
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132498

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIMOLAR MIXTS. OF FURAN AND ETO
SUB2 CN:NCO SUB2 ET IN C SUB6 H SUB6 WERE TREATED WITH 1 VOL. N H SUB2
SO SUB4 AND THEN WITH 1.5 FOLD EXCESS N SUB2 H SUB4 TO GIVE I AS FOLLOWS
(R PRIME1, R PRIME2, AND R PRIME3 GIVEN): AS SHOWN ON MICROFICHE. I
WERE CHARACTERIZED AS PICRATES, PICROLONATES, OR HCL SALTS. SIMILARLY,
1,3,DIPHENYL,ISOBENZOFURAN GAVE AN ADDUCT WHICH WITH N SUB2 H SUB4 GAVE
1,4,DIPHENYLPHthalazine, M. 194.5-95DEGREES. OTHER DIENOPHILES
(THIOYLANILINE, PHNO) FAILED TO YIELD PRODUCTS WITH FURANS.
FACILITY: VOENNO-MED. AKAO. IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--N,N,DIALKYL DIAZENIUM BROMIDES IN DIENE SYNTHESIS -U-

AUTHOR--ZELENIN, K.A., BEZHAN, I.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETERCTSIL. SOEDIN. 1970, (1), 93-4

DATE PUBLISHED-----7C

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, ELECTRON PARAMAGNETIC RESONANCE, CHEMICAL
SYNTHESIS, MOLECULAR STRUCTURE, SPECTROSCOPIC ANALYSIS, HETEROCYCLIC
NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1783

STEP NO--UR/0409/70/000/001/0093/0094

CIRC ACCESSION NO--AP0100363

UNCLASSIFIED

Acc. Nr:

AP0100363

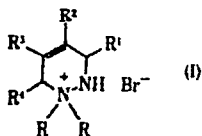
Abstracting Service:
CHEMICAL ABST.

570

Ref. Code:

U/R0409

111400m N,N-Dialkyldiazonium bromides in diene synthesis. Zelenin, K. N.; Bezhan, I. P. (Voenno-Med. Akad. im. Kirova, Leningrad, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 93-4 (Russ). $R_2^+N:NH.Br^-$ (0.2 mole) reacted with 0.21 mole $CHR^1:CR^2:CHR^3:CHR^4$ 4 hr at -5° and worked up gave I (R, R^1, R^2, R^3, R^4 , m.p. (2:1 AcOEt-Me, CHOH), and % yield given): Me, H, H, H, H, 188-90°, 82; Me, H, Me, Me, H, 181-3°, 72; Me, Me, H, H, Me, 180°, 95; Et, H, H, H, H,



162-3°, 85; Et, Me, H, H, Me, 124-5°, 80. Ir and EPR spectra are given. J. Panchartek

REEL/FRAME
19841783

7

USSR

UDC 620.179.16

ASKAROV, M. A., YAKUSHKO, G. YE., BEZHANOV, R. A.

"An Ultrasonic Defectoscope for the Automatic Monitoring of Large-Diameter Pipes"

Trudy Tbilisskogo Nauchno-Issledovatel'skogo Elektrotekhnicheskogo Instituta (Works of the Tbilisi Electrical Engineering Scientific Research Institute), No 5, 1970, pp 81-85 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1970, Abstract No 7.32.972

Translation: In the article is described an ultrasonic defectoscope for the automatic monitoring of large-diameter (up to 219 mm) pipes with a wall thickness from 6 to 20 mm, intended for the detection of defects (cracks, pits, foliations, etc.) with dimensions in excess of 2-3 mm. The device has chambers with seeking heads, self-adjusting along the pipe surface; acoustic contact is created by a liquid fed into the chambers, and the defect is registered by an automatic monitor. Note is taken of the high resolving power of the seeking heads, which are provided with 1/2